Application No.: 09/878,465 Docket No.: MOFFAT 3.0-030

IN THE CLAIMS

1. (previously presented) A drive head assembly for use to fluid sealingly rotate a rod extending down a well, comprising:

a housing having upper and lower openings for receiving said rod therethrough;

a rotatable sleeve adapted to concentrically receive a portion of said rod therethrough; said sleeve being rotatably mounted in said housing and having an upper end passing through said upper opening to extend outwardly of said housing;

a prime mover drivingly connected to said sleeve for rotation thereof;

means disposed on said upper end of said sleeve for drivingly connecting said sleeve to the rod; and

seal means within said sleeve to prevent the escape of well fluids, wherein said means for drivingly connecting said sleeve to said rod are removable from said upper end of said sleeve for servicing of said seal means without removal of said drive head assembly from the well.

2. (original) The drive head assembly of claim 1 further comprising a tubular standpipe concentrically mounted within said sleeve in annular spaced relation defining a first annular fluid passageway between said standpipe and said sleeve and a second annular fluid passageway between said standpipe and said rod, said second passageway being in fluid communication with wellhead pressure in said well during normal operations.

3. (previously presented) The drive head assembly of claim 2 wherein said seal means are disposed between said first and second passageways permitting the maintenance of a fluid pressure differential therebetween.

4. (original) The drive head assembly of claim 3 including means for maintaining the fluid pressure in said first passageway in excess of wellhead pressure in said second passageway.

5. (original) The drive head assembly of claim 4 wherein said seal means are disposed in said first passageway.

6. (original) The drive head assembly of claim 5 wherein said seal means are compressively loaded in said first passageway for enhanced sealing.

7. (original) The drive head assembly of claim 4 wherein said means for maintaining the fluid pressure in said first passageway comprise a fluid pump and a fluid conduit for the delivery of pressurized fluid from said pump to said first passageway.

8. (original) The drive head assembly of claim 7 wherein said pump is actuatable by said prime mover.

9. (previously presented) The drive head assembly of claim 7 wherein said means for drivingly connecting said sleeve to the rod comprise a cap member releasably and tightenably connectable to said upper end of said sleeve for rotation therewith, said cap member having a bore for the passage of the rod therethrough, and a rod clamp connected to said cap member for transmitting rotational torque from said cap member to said rod.

10. (original) The drive head assembly of claim 9 further comprising static seal means disposed in sealing contact around said rod adjacent said upper end of said sleeve.

11. (previously presented) The drive head assembly of claim 10 wherein said static seal means comprise one or more vertically stacked sealing members and a rigid seal carrier for supporting said seal members about the rod, said seal carrier sealingly occupying the annular space between said sealing members and the inner surface of said upper end of said sleeve.

12. (original) The drive head assembly of claim 11 wherein said seal means and said static seal means operably function together as a stuffing box for said rod.

13. (original) The drive head assembly of claim 12 wherein removal of said cap member from said sleeve enables said stuffing box to be serviced without removing said drive head assembly from the well.

14. (original) The drive head assembly of claim 13 wherein tightening said cap member on said sleeve compressively loads said stuffing box for fluid sealing purposes.

15. (currently amended) The ~~stuffing box~~ drive head assembly of claim 13 including means to bias said seal means towards said seal carrier and, in turn, said seal carrier towards said cap member.

16. (original) The drive head assembly of claim 15 wherein said means to bias press said seal means against said seal carrier and, in turn, said seal carrier against said cap

member when the fluid pressure in said first passageway exceeds wellhead pressure in said second passageway.

17. (original) The drive head assembly of claim 13 including a ring member disposed beneath said seal means to support said seal means in said first passageway.

18. (original) The drive head assembly of claim 17 including means to bias said seal means against said ring member and to bias said seal carrier against said cap member.

19. (original) The drive head assembly of claim 15 wherein said means to bias is a spring.

20. (previously presented) The drive head assembly of claim 18 wherein said means to bias is a spring.

21. (original) The drive head assembly of claim 15 further including a first upper and a second lower spaced apart bearing hubs, each having a bore formed axially therethrough for rotatably supporting said sleeve therein.

22. (original) The drive head assembly of claim 21 wherein a lower end of said standpipe is received into said bore in said lower bearing hub for a fluid tight connection between said standpipe's outer surface and said bore, the interior of said standpipe remaining exposed to wellhead pressure.

23. (original) The drive head assembly of claim 22 further including a labyrinth seal for fluid sealing between said first fluid passageway and said lower bearing hub.

24. (original) The drive head assembly of claim 23 wherein said labyrinth seal is sealingly biased against an inner surface of said first fluid passageway and a contiguous surface of said lower bearing hub.

25. (original) The drive head assembly of claim 24 wherein said labyrinth seal includes a plurality of apertures formed axially therethrough for respective fastening members adjustably connecting said labyrinth seal to said contiguous surface of said lower bearing hub.

26. (original) The drive head assembly of claim 25 wherein the diameter of said apertures exceeds the diameter of said fasteners permitting said labyrinth seal to move in the horizontal plane relative to said contiguous surface of the lower hub for self alignment of said labyrinth seal to said inner surface of said first fluid passageway.

27. (previously presented) The drive head assembly of claim 26 including an O-ring seal between said labyrinth seal and said contiguous surface of said lower bearing hub for additional sealing therebetween.

28. (previously presented) The drive head assembly of claim 30 wherein said inner surface of said first fluid passageway is defined by one or more of the inner surface of said sleeve, said driven gear, a bearing member rotatably supporting said sleeve or an extension member connected to said sleeve.

29. (previously presented) The drive head assembly of claim 21 wherein said prime mover is drivingly connected to said sleeve by gears.

30. (previously presented) The drive head assembly of claim 29 wherein said gears comprise a drive gear connected for rotation to a drive shaft extending from said prime mover, and a driven gear fixedly connected to said sleeve for transferring rotational torque from said drive gear to said sleeve.

31. (previously presented) The drive head assembly of claim 30 wherein said housing supports said prime mover and said first and second bearing hubs thereon, and encloses said drive shaft and said drive and driven gears therein.

32. (original) The drive head assembly of claim 4 including adjustable valve means for controlling the pressure of fluid in said first fluid passageway.

33. (original) The drive head assembly of claim 32 wherein the pressure of fluid in said first fluid passageway is maintained in the range of 50 to 500 psi in excess of wellhead pressure in said second fluid passageway.

34. (original) In a stuffing box for sealing the end of a rotatable rod extending from a well bore, the improvement comprising:

a first fluid passageway disposed concentrically around at least a portion of the rod passing through the stuffing box;

a second fluid passageway disposed concentrically inside said first passageway, said second passageway being in fluid communication with wellhead pressure during normal operations;

said first and second passageways being in fluid communication with one another and having seal means disposed therebetween to permit the maintenance of a pressure differential between them; and

means to pressurize fluid in said first passageway to a pressure in excess of wellhead pressure to prevent the leakage of well fluids through said stuffing box.

35. (previously presented) The stuffing box of claim 34 including means to normally bias said seal means in opposition to wellhead pressure in said second passageway.

36. (previously presented) The stuffing box of claim 35 wherein said seal means are disposed in said first passageway between said means to bias and a seal retaining member.

37. (previously presented) The stuffing box of claim 36 wherein said means to bias comprise a spring to act with or without pressure in said first passageway to oppose wellhead pressure in said second passageway.

38. (previously presented) The stuffing box of claim 34 further comprising an outer axially disposed tubular sleeve disposed around a tubular standpipe concentrically mounted within said sleeve in annular spaced relation to said sleeve and the rod, the annular space between said sleeve and said standpipe defining said first passageway and the annular space between said standpipe and the rod defining said second fluid passageway.

39. (previously presented) The stuffing box of claim 38 wherein said sleeve is supported for rotation and is drivingly connected to said rod for rotation thereof.

40. (previously presented) The stuffing box of claim 68 wherein said sleeve has an upper and a lower end, said upper end

being adapted for a releasable and tightenable connection to a cap member that closes said upper end around the rod.

41. (previously presented) A drive head for use with a progressing cavity pump in an oil well, comprising:

a drive head housing;

a drive shaft rotatably mounted in said housing for connection to a drive motor;

an annular tubular sleeve rotatably mounted in said housing and drivingly connected to said drive shaft;

a tubular standpipe concentrically mounted within said sleeve in annularly spaced relation thereto defining a first tubular fluid passageway for receiving fluid at a first pressure and operable to receive a polished rod therein in annularly spaced relation defining a second tubular fluid passageway exposed to oil well pressure during normal operation;

seal means disposed in said first fluid passageway;

means for maintaining the fluid pressure within said first fluid passageway greater than the fluid pressure in said second fluid passageway; and

means for releasably drivingly connecting said sleeve to said polished rod received in said standpipe.

42. (previously presented) The drive head as defined in claim 41, further including a centrifugal backspin retarder coupled to said drive shaft for reducing reverse rotation of said sleeve.

43. (previously presented) In a drive head for rotating a rod in a well having a housing for fluid sealingly receiving the rod therethrough, said housing having a lower end and an upper openable end, the improvement comprising a stuffing box for said rod integrated into said upper end of said housing to enable

said stuffing box to be serviced by opening said openable upper end of said housing, without removing said drive head from the well.

44. (previously presented) In a drive head as defined in claim 43 wherein said stuffing box seals said rod against the pressure of fluid in the well, further including a fluid pump for pressurizing said stuffing box.

45. (previously presented) In a drive head as defined in claim 44, maintains an uphole side of said stuffing box at a higher pressure than a downhole side thereof to limit leakage of fluid from said well bore.

46. (withdrawn) A polished rod lock out clamp for use in securing the polished rod in an oil well installation, comprising, clamp body having a bore for receiving a polished rod in spaced relation to said bore; clamp members in said body for engaging a polished rod in said bore; and manipulating means secured to said body and said damp members for moving said clamp members between a polished rod gripping position whereat said clamp members grippingly engage said polished rod to prevent rotation and axial movement thereof and a retracted position whereat said clamp members are removed from said polished rod to permit rotational and axial movement of said polished rod in said bore of said clamp body.

47. (withdrawn) A clamp as defined in claim 46, further including means for centering said polished rod in said bore of said body.

48. (withdrawn) A clamp as defined in claim 46, each said clamp member being radially movable with respect to said

polished rod and having an elongated arcuate inner surface for engaging said polished rod.

49. (withdrawn) A clamp as defined in claim 46, each said clamp member being in the form of a piston, said clamp body having a piston bore for each piston, each said piston bore extending radially of said bore of said clamp body, each piston having an inner end proximate said bore of said clamp body, a cylindrical recess in said inner end for receiving and grippingly engaging said polished rod and means for moving said pistons in respective piston bores between said positions of said clamp members.

50. (withdrawn) A clamp as defined in claim 49, said clamp members comprising a pair of radially opposed pistons.

51. (withdrawn) A clamp as defined in claim 50, said pistons having mutually engageable end faces and seal means disposed between said end faces, said pistons being sealingly disposed in respective piston bores and being sealingly engageable with said polished rod to prevent well fluids from escaping past said clamp when said clamp members are disposed in said clamping position.

52. (withdrawn) A clamp as defined in claim 49, the radius of said inner surface being slightly less than the radius of said polished rod to enhance gripping force.

53. (withdrawn) A clamp as defined in claim 46, further including means for biasing said clamp members towards said retracted position.

54. (withdrawn) A clamp as defined in claim 46, further including means for axially locating said clamp members in said clamp body and for transferring axial and rotational loads from said clamp members to said clamp body.

55. (withdrawn) A damp as defined in claim 46, said manipulating means including a bolt threaded into said clamp body.

56. (withdrawn) A clamp as defined in claim 46, said clamp being arranged to be secured between a polished rod drive head and a flow tee of an oil well installation.

57. (withdrawn) A clamp as defined in claim 46, said clamp forming part of a drive head for driving said polished rod.

58. (withdrawn) A polished rod lock out clamp for use in securing the polished rod in an oil well installation, comprising: a clamp body having a bore for receiving a polished rod in spaced relation; clamp members in said body for engaging a polished rod in said bore, each said clamp member being radially movable with respect to said polished rod and having an elongated arcuate inner surface for matingly receiving and engaging said polished rod; manipulating means secured to said body and said clamp members for moving said clamp members between a polished rod gripping position whereat said clamp members grippingly engage said polished rod to prevent rotation and axial movement thereof and a retracted position whereat said clamp members are removed from said polished rod to permit rotational and axial movement of said polished rod in said bore of said clamp body; and means for biasing said clamp members towards said retracted position.

59. (withdrawn) A clamp as defined in claim 58, said clamp body further having piston bores extending radially of said bore of said clamp body, each said clamp member comprising a piston disposed in a piston bore, each piston having an inner end and an elongated recess in said inner end for receiving and grippingly engaging said polished rod.

60. (withdrawn) A clamp as defined in claim 59, said manipulating means including a bolt secured to each said pistons, said bolts being threadedly engaged with radially extending threaded holes in said clamp body for radial movement of said bolts and said pistons, said bolts extending outwardly of said damp body for manipulation thereof.

61. (withdrawn) A clamp as defined in claim 58, said clamp members including a pair of opposed clamp members each forming an elongated segment of a cylinder having said arcuate inner surface for engagement with a polished rod and an arcuate outer surface for engagement with said bore of said clamp body.

62. (withdrawn) A clamp as defined in claim 61, each said clamp body having a longitudinally extending dovetail slot, said manipulating means including a bolt associated with each said clamp members, said bolts being threadedly engaged with radially extending threaded holes in said clamp body for radial movement, a dovetail key formed on inner ends of said bolts for mating engagement with said dovetail slots for securing said bolts and associated clamp members, said bolts extending outwardly of said clamp body for manipulation thereof.

63. (withdrawn) A clamp as defined in claim 58, wherein the radius of said inner arcuate surface being slightly less than the radius of the outer surface of said polished rod.

64. (withdrawn) A combined blow out preventer and polished rod lock out clamp for use in an oil well installation, comprising: a housing having a bore for receiving a polished rod in spaced relation and opposed bores extending radially of said polished rod bore of said housing; clamp members in said housing for grippingly engaging said polished rod in said polished rod bore, each said clamp member comprising a metallic piston disposed in one of said radial bores, each piston having an inner end and an elongated recess in said inner end for receiving and grippingly engaging said polished rod and an elastomeric liner to provide a seal between said clamp member and its associated bore and a seal between said clamp member and said polished rod to prevent well fluid from coming up a well bore of said installation and escaping to the exterior of said well bore when said installation is being serviced; and manipulating means secured to said housing and said clamp members for moving said clamp members between a polished rod gripping position whereat said clamp members grippingly engage said polished rod to prevent rotation and axial movement thereof and a retracted position whereat said clamp members are removed from said polished rod to permit rotational and axial movement of said polished rod in said bore of said clamp housing; and means for biasing said clamp members towards said retracted position.

65. (withdrawn) A clamp as defined in claim 64, said manipulating means including a bolt secured to each said pistons, said bolts being threadedly engaged with radially extending threaded holes in said clamp body for radial movement of said bolts and said pistons, said bolts extending outwardly of said clamp body for manipulation thereof.

66. (previously presented) The stuffing box of claim 34 wherein said means to pressurize fluid in said first passageway comprise a fluid pump and a fluid conduit for the delivery of pressurized fluid from said pump to said first passageway.

67. (previously presented) The stuffing box of claim 66 wherein said pump is actuatable by a prime mover, said prime mover also being drivingly connected to said sleeve for rotation thereof, said sleeve in turn being drivingly connected to said rotatable rod so that rotation of said sleeve by said prime mover causes rotation of said rod.

68. (previously presented) The stuffing box of claim 39 wherein said sleeve is supported for rotation by a housing having vertically aligned upper and lower openings for receiving said rotatable rod therethrough.

69. (previously presented) The stuffing box of claim 40 wherein said upper end of said tubular sleeve extends through said upper opening to extend upwardly and outwardly from said housing.

70. (previously presented) The stuffing box of claim 69 additionally comprising static seal means disposed in sealing contact around said rod in said upper end of said tubular sleeve.

71. (previously presented) The stuffing box of claim 70 wherein said static seal means comprise one or more vertically stacked sealing members and a rigid seal carrier for supporting said seal members about the rod, said seal carrier sealing occupying the annular space between said sealing members and the inner surface of said upper end of said tubular sleeve.

72. (previously presented) The stuffing box of claim 71 wherein said cap member is releasable from said upper end of said tubular sleeve for servicing of said stuffing box from outside said housing.

73. (previously presented) A drive head with a prime mover for rotatably driving a polished rod in a progressing cavity pump well, including:

a housing with upper and lower openings for receiving the polished rod therethrough;

a tubular drive sleeve rotatably mounted in said housing for axially supporting and rotatably driving said polished rod, said drive sleeve having an upper end extending outwardly of said housing through said upper opening therein;

releasable connecting means accessible from outside of said housing for drivingly connecting said upper end of said drive sleeve to said polished rod;

a stuffing box to seal said rod against the pressure of fluid in said well disposed in said tubular drive sleeve, said stuffing box being accessible for servicing from outside of said drive head upon removal of said connecting means from said upper end of said sleeve.

74. (previously presented) A drive head as defined in claim 73, further including:

a tubular standpipe secured to prevent axial displacement and rotation of said standpipe relative to said housing;

said standpipe being disposed within said drive sleeve in annularly spaced relation thereto for generally concentrically receiving said polished rod therethrough in annularly spaced apart relation;

rotary sealing means disposed between said standpipe and said drive sleeve to prevent the flow of well fluids into the annulus between said drive sleeve and said standpipe; and

static sealing means disposed between said drive sleeve and said polished rod to prevent the escape of well fluids between said drive sleeve and said polished rod.

75. (previously presented) A drive head as defined in claim 74, wherein said standpipe, said drive sleeve, said rotary sealing means and said static sealing means operably function together as said stuffing box for said polished rod.

76. (previously presented) A drive head as defined in claim 75, further including pressurization means to apply a fluid pressure in excess of well pressure against said rotary sealing means.

77. (previously presented) A drive head as defined in claim 76, wherein said fluid pressure acts on a lower side of said rotary sealing means against well pressure acting on an upper side of said rotary sealing means.

78. (currently amended) A drive head as defined in claim 77 further including a first lower sealing means to seal a lower end of said tubular drive sleeve against the pressure of fluid in said ~~annular space~~ annulus between said tubular drive sleeve and said standpipe.

79. (currently amended) A drive head as defined in claim 78 including a second lower sealing means to seal a lower end of said standpipe to prevent well fluids from escaping into said ~~annular space~~annulus between said tubular drive sleeve and said standpipe.

80. (previously presented) A drive head as defined in claim 79, wherein said first lower sealing means comprise a labyrinth seal between said housing and said tubular drive sleeve.

81. (currently amended) A drive head as defined in claim 80, wherein said pressurization means includes a source of pressurized fluid and a fluid passage in communication with ~~the annular space~~ said annulus between said tubular drive sleeve and said standpipe and between said rotary seal means and said first lower sealing means.

82. (previously presented) A drive head as defined in claim 81, wherein said source of pressurized fluid includes a pump driven from said prime mover.

83. (previously presented) A drive head as defined in claim 81, wherein said prime mover is a hydraulic motor which operates to rotate said polished rod and pump said pressurized fluid.

84. (previously presented) A drive head as defined in claim 78, wherein said lower end of said standpipe is compliantly secured relative to said housing to minimize misalignment of said standpipe relative to said rotary sealing means.

85. (previously presented) A drive head as defined in claim 74, said static seal means including one or more axially stacked sealing members and a rigid seal carrier for supporting said sealing members about said polished rod, said seal carrier sealingly occupying the annular space between said sealing

members and an inner surface of said upper end of said drive sleeve.

86. (previously presented) A drive head as defined in claim 74, said rotary sealing means including one or more ring seals, said ring seals rotating with and sealed to said drive sleeve and rotating against and sealing to said standpipe.

87. (previously presented) A drive head as defined in claim 86, said ring seals comprising packings, said packings rotating with and sealing to said drive sleeve and rotating against and sealing to said standpipe.

88. (previously presented) A drive head as defined in claim 87, further including spring means for compressively loading said packings.

89. (previously presented) A drive head as defined in claim 88, further including pressurizing means for maintaining lubricating fluid pressure against said packings above the discharge pressure of fluid in said well.

90. (previously presented) A drive head as defined in claim 89, said pressurizing means including lower rotary sealing means between said housing and a lower end of said drive sleeve to form an annular fluid chamber between said drive sleeve and said standpipe below said packings and above said lower rotary sealing means; and

fluid communication between said annular fluid chamber and a pressure source for said lubricating fluid.

91. (previously presented) A drive head as defined in claim 90, wherein said lower rotary sealing means comprise a labyrinth seal between said housing and said drive sleeve.

92. (previously presented) A drive head as defined in claim 91, said pressure source including a pump and a pressure relief valve to regulate said lubricating fluid pressure to said annular fluid chamber.

93. (previously presented) A drive head as defined in claim 92, said pump being driven by said prime mover.

94. (previously presented) A drive head as defined in claim 91, said pressure source being a hydraulic system including a hydraulic motor, said hydraulic motor being operatively connected to said polished rod for the rotation thereof, and said annular fluid chamber being in fluid communication with said hydraulic system for maintaining said lubricating fluid pressure therein by means of a pressure reducing valve.

95. (previously presented) A drive head as defined in claim 73, said upper end of said drive sleeve being threaded; said releasable connecting means including a threaded cap member for threadedly engaging said threaded drive sleeve and clamp means for coupling to said threaded cap and to said polished rod.

96. (previously presented) A drive head for sealing and rotating a polished rod extending into a well bore, including:

a housing having aligned upper and lower openings therein for receiving the polished rod therethrough;

a tubular drive sleeve rotatably mounted in said housing for axially supporting and rotatably driving the polished rod, said drive sleeve having an upper end extending through said upper opening of said housing;

a prime mover for rotation of said tubular drive sleeve;

means located outside of said housing for drivingly and releasably connecting said upper end of said drive sleeve to said polished rod;

a tubular standpipe secured to said housing within said drive sleeve in annularly spaced relation thereto for generally concentrically receiving said polished rod therethrough in annularly spaced apart relation;

rotary seal means disposed in an annular space between said drive sleeve and said standpipe, said rotary seal means being exposed on one side thereof to well fluids; and

static seal means disposed between said drive sleeve and said polished rod.

97. (previously presented) A drive head as defined in claim 96, said standpipe being non-rotatably and compliantly secured to said housing to permit said standpipe to accommodate mis-alignment at said rotary seal means.

98. (previously presented) A drive head as defined in claim 96, said rotary seal means including one or more ring seals, said ring seals rotating with and sealing to said drive sleeve and rotating against and sealing to said standpipe.

99. (previously presented) A drive head as defined in claim 98, said ring seals including packings, said packings rotating with and sealing to said drive sleeve and rotating against and sealing to said standpipe.

100. (previously presented) A drive head as defined in claim 99, further including spring means for compressively loading said packings.

101. (previously presented) A drive head as defined in claim 100, further including pressurizing means for maintaining lubricating fluid pressure against said packings above the discharge pressure of fluid in said well.

102. (previously presented) A drive head as defined in claim 101, said pressurizing means further including lower rotary sealing means between said housing and said drive sleeve forming an annular fluid chamber between said drive sleeve and said standpipe below said packings and above said lower sealing means; and

fluid communication between said annular fluid chamber and a pressure source for said lubricating fluid.

103. (previously presented) A drive head as defined in claim 102, said lower rotary sealing means including a labyrinth seal between said housing and said drive sleeve.

104. (previously presented) A drive head as defined in claim 103, said pressure source including a pump and a pressure relief valve to regulate said lubricating fluid pressure to said annular fluid chamber.

105. (previously presented) A drive head as defined in claim 104, said pump being driven by said prime mover.

106. (previously presented) A drive head as defined in claim 105 wherein said prime mover is an electric motor.

107. (previously presented) A drive head as defined in claim 105, wherein said prime mover is a hydraulic motor that both rotates said tubular drive sleeve and maintains said lubricating fluid pressure in said annular fluid chamber.

108. (previously presented) A drive head as defined in claim 107, including a pressure reducing valve disposed between said hydraulic motor and said annular fluid chamber.

109. (previously presented) A drive head for rotatably driving a polished rod in a well, including:

a housing having vertically aligned upper and lower openings therein for passage of said polished rod therethrough;

a tubular drive sleeve rotatably mounted in said housing to concentrically receive said polished rod therethrough;

a non-rotatable tubular standpipe concentrically received within said tubular sleeve and sealingly and detachably secured to said housing to define a first annulus between said sleeve and said standpipe and a second annulus between said polished rod and said standpipe;

rotary seal means disposed in said first annulus between said standpipe and said drive sleeve in contact with well fluids on one side thereof and with said first annulus on the other side thereof;

means for rotating said tubular drive sleeve; and

means connecting said tubular drive sleeve to said polished rod for rotation thereof.

110. (previously presented) The drive head of claim 109 additionally including means for drainage of well fluids flowing past said rotary seal means away from said housing.

111. (previously presented) The drive head of claim 110 wherein said means for drainage include a ring member in said first annulus beneath said rotary seal means, said ring member having one or more holes formed therein in alignment with one or more holes in said tubular sleeve through which said well fluids can drain for disposal.

112. (previously presented) The drive head of claim 111 wherein said means for drainage additionally include lower seal means disposed in said first annulus beneath said ring member to prevent the flow of well fluids into said housing.

113. (previously presented) The drive head of claim 112 wherein said ring member is a lantern ring.

114. (previously presented) The drive head of claim 113 wherein said lower seal means comprise one or more ring seals.

115. (previously presented) The drive head of claim 114 further including static seal means to seal well fluids between said polished rod and said tubular drive sleeve.

116. (previously presented) The drive head of claim 115 wherein said tubular drive sleeve has an upper end extending through said upper opening in said housing to project above said housing for access.

117. (previously presented) The drive head of claim 116 wherein said means connecting said tubular drive sleeve to said polished rod comprise a cap tightenably and removably connectable to said upper end of said tubular drive sleeve and a rod clamp connectable between said cap and said polished rod for transmitting rotational torque to said rod.

118. (previously presented) The drive head of claim 117 wherein, upon removal of said cap and said rod clamp from said tubular sleeve, said static seal means, said rotary seal means, said ring member and said lower seal means are removable upwardly through said tubular drive sleeve for servicing.

119. (cancelled)

120. (previously presented) A drive head for rotatably driving a polished rod in a progressing cavity pump well, comprising:

a housing for receiving a polished rod therethrough;

a tubular drive shaft rotatably mounted in said housing for axially supporting and rotatably driving said polished rod, said drive shaft having an upper end extending outwardly of said housing;

sealing means for preventing well fluids from escaping from said well, said sealing means being accessible from the top of said drive head to facilitate servicing of said sealing means; and

connecting means accessible from the top of said housing for drivingly connecting said upper end of said shaft to said polished rod.

121. (previously presented) A drive head as defined in claim 120, further including:

a tubular standpipe disposed within said drive shaft in annularly spaced relation thereto for receiving said polished rod therethrough in annularly spaced apart relation, said drive shaft and said standpipe forming an annular seal chamber;

said sealing means including rotary seal means disposed in said seal chamber to prevent flow of well fluids along the

interior of said drive shaft; and static seal means disposed between said drive shaft and said polished rod to prevent the escape of well fluids along said polished rod.

122. (previously presented) A drive head as defined in claim 121, further including means for non-rotatably and compliantly securing a bottom end of said standpipe to said housing below a lower end of said drive shaft to permit said standpipe to tilt with respect to said drive shaft to adjust for mis-alignment of said standpipe and said drive shaft at said rotary seal means.

123. (previously presented) A drive head as defined in claim 121, said connecting means including a removable cap member for engaging said upper end of said drive shaft, said cap member being removable to provide access to said static seal means and said rotary seal means.

124. (previously presented) A drive head as defined in claim 121, said static seal means including one or more axially stacked sealing members about said polished rod and sealingly occupying an annular space between said sealing members an inner surface of said upper end of said shaft.

125. (previously presented) A drive head as defined in claim 121, said rotary sealing means including one or more ring seals, said ring seals sealingly engaging an inner surface of said drive shaft and an outer surface of said standpipe, and being rotatable with said drive shaft with respect to said standpipe.

126. (previously presented) A drive head as defined in claim 125, said rotary seal means being compression packings.

127. (previously presented) A drive head as defined in claim 126, further including spring means disposed in said seal chamber for compressively loading said compression packings.

128. (previously presented) A drive head as defined in claim 121, further including means for pressurizing said seal chamber and maintaining a fluid pressure therein above well fluid discharge pressure.

129. (previously presented) A drive head as defined in claim 128, said means for pressurizing including further seal means between said housing and the lower end of said drive shaft for sealing a lower end of said seal chamber; and

means for communicating fluid under pressure to said seal chamber from a fluid pressure source.

130. (previously presented) A drive head as defined in claim 129, said further seal means including a labyrinth seal between said housing and said drive shaft.

131. (previously presented) A drive head as defined in claim 130, said means for communicating fluid under pressure including an oil pump and a pressure relief valve for regulating lubricating pressure supplied to said annular fluid chamber.

132. (previously presented) A drive head as defined in claim 131, said oil pump being driven by said drive head.

133. (previously presented) A drive head as defined in claim 132, said means for pressuring including means for taking fluid pressure from a hydraulic motor that drives said drive

head and a pressure reducing valve for regulating said lubricating fluid pressure to said seal chamber.

134. (previously presented) A drive head as defined in claim 121, further including secondary rotary seal means between said drive shaft and said standpipe disposed below fluid passages extending through said drive shaft to prevent well fluid that leaks past said rotary seal means from leaking down a passage between said drive shaft and said standpipe and into drive head lubricating oil, said fluid passages allowing the well fluid to drain through the wall of said drive shaft.

135. (previously presented) A drive head as defined in claim 134, further including a lantern ring disposed adjacent to and in communication with said fluid passages through said drive shaft and located above said secondary rotary seal means.

136. (previously presented) A drive head as defined in claim 135, said secondary rotary seal means including rotary lip seals.

137. (previously presented) A drive head as defined in claim 121, further including means for rotatably driving said drive shaft, including an input shaft in said housing for connection to a prime mover; first gear means mounted on said input shaft for rotation therewith; and second gear means in meshing engagement with said first gear means and secured to said main shaft for rotatably driving said main shaft.

138. (previously presented) A drive head for rotatably driving a polished rod in a progressing cavity pump well, comprising:

a housing for receiving a polished rod therethrough;

a tubular drive shaft rotatably mounted in said housing for axially supporting and rotatably driving said polished rod, said drive shaft having an upper end extending outwardly of said housing;

a tubular standpipe disposed within said drive shaft in annularly spaced relation thereto for receiving said polished rod therethrough in annularly spaced apart relation, said drive shaft and said standpipe forming an annular seal chamber;

sealing means for preventing well fluids from escaping from said well, said sealing means including rotary seal means disposed in said seal chamber to prevent flow of well fluids along the interior of said drive shaft; and static seal means disposed between said drive shaft and said polished rod to prevent the escape of well fluids along said polished rod;

means for non-rotatably and compliantly securing a bottom end of said standpipe to said housing below a lower end of said drive shaft to permit said standpipe to tilt with respect to said drive shaft to adjust for mis-alignment of said standpipe and said drive shaft at said rotary seal means; and

connecting means accessible from the top of said housing for drivingly connecting said upper end of said shaft to said polished rod, said connecting means including a removable cap member for engaging said upper end of drive shaft and closing said drive shaft, said cap member being removable to provide access to said static seal means and said rotary seal means.

139. (currently amended) A drive head as defined in claim 120, further including a backspin retarder for controlling reverse rotation of said ~~main~~ drive shaft when means for rotating said ~~main~~ drive shaft ~~is~~ are deactivated.

140. (previously presented) A drive head as defined in claim 139, said backspin retarder including a backspin retarder

actuating mechanism for engaging and disengaging a brake, comprising:

a drive member connected to said drive shaft and having at least one ball retaining groove in a lower surface, and a torque transfer ball in each groove, each groove having a ball chamber at one end for holding a ball in a disengaged position above said lower surface, a ball engaging surface at the other end of said groove and a ramped bottom surface sloping toward the lower surface from the ball chamber to the torque transfer surface; and

a brake actuating member freely rotatably mounted on said drive shaft below said drive member and having an upper surface juxtaposed to said lower surface and at least one ball receiving groove in said upper surface for receiving a torque transfer ball, the ball receiving groove having a ball engaging torque transfer surface at one end thereof for engaging the ball and transferring torque to the brake actuating member when the drove member rotates in a reverse direction.

141. (previously presented) A drive head as defined in claim 140, said ball receiving groove having a depth at said ball engaging surface approximately equal to the radius of a ball and sloping upwardly to said upper planar surface.

142. (previously presented) A drive had as defined in claim 141, said ball retaining groove having a depth at said ball chamber approximately equal to the diameter of said ball, and having a depth at said ball engaging surface approximately equal to the radius of said ball, said bottom surface thereof sloping downwardly from said ball chamber to said ball engaging surface.

143. (previously presented) A drive head as defined in claim 142, each said ball retaining groove having a radial hole in said drive member opening into said ball chamber, said hole having a diameter less than the diameter of said ball formed to intersect said ball chamber at approximately a height above said lower surface equal to the radius of said ball, said hole forming a ball seat on which said ball is seated when the speed of rotation of said drive shaft is at or above a threshold value.

144. (currently amended) A drive head as defined in claim 143, wherein, when the speed of rotation of said shaft is less than said threshold value, said ramped bottom surface is operable to push a ball along said ball receiving groove toward said torque transfer surface thereof until said ball engages said torque transfer surface.

145. (previously presented) A drive head as defined in claim 140, said ball being moveable into said disengaged position in said ball chamber when the forward rotational speed of said driving member exceeds a threshold value, said ball moving out of said chamber and falls toward said driven member when the rotational speed falls below said threshold and said ball engaging said torque transfer surfaces when said drive member rotates in a reverse direction.

146. (previously presented) In a drive head for rotating a rod in a well having a tubular drive sleeve for fluid sealingly receiving the rod therethrough, said drive sleeve having a lower end and an upper openable end, the improvement comprising a stuffing box for said rod integrated into said upper end of said tubular sleeve to enable said stuffing box to be serviced by

opening said openable upper end of said tubular sleeve, without removing said drive head from the well.

147. (previously presented) In a drive head as defined in claim 146 wherein said stuffing box seals said rod against the pressure of fluid in the well, further including a fluid pump for pressurizing said stuffing box.

148. (previously presented) In a drive head as defined in claim 147, wherein said fluid pump maintains an uphole side of said stuffing box at a higher pressure than a downhole side thereof to limit leakage of fluid from said well bore.